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Synthesis of Difunctional Isocyanates and Subsequent Reaction with the Hexamolybdate Anion

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Poster Presentation 16

SYNTHESIS OF DIFUNCTIONAL ISOCYANATES AND SUBSEQUENT REACTION WITH THE HEXAMOLYBDATE ANION

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The attachment of organic molecules to polyoxometalates has led to the development of a variety of interesting compounds. Modification of the organic substituents attached to polyoxometalates may enable the specific targeting of biological macromolecules within diseased cells. Molecules of this type are already being used as selective markers for conventional electron microscopy and have been shown to exhibit anti-viral activity. These compounds are also expected to have utility as oxidation catalysts and anti-tumoral agents.

Our research involves the synthesis and characterization of the polyoxometalate complex $[Bu_4N]_4[(Mo_5O_{18})Mo\_N\text{-}Z\text{-}N\_Mo(Mo_5O_{18})]$ where Z = $-(C_6H_4)O(CH_2)_3O(C_6H_4)$. The synthesis of the difunctional isocyanate linker $OCN\text{-}(C_6H_4)O(CH_2)_3O(C_6H_4)\text{-}NCO$ has recently been achieved. Subsequent plans include reacting the diisocyanate with two equivalents of n-butylammonium hexamolybdate to obtain the target molecule.